CLAIMS

1. Hydrokinetic coupling apparatus (10), especially for a motor vehicle, of the type comprising, considered axially from front to rear:

– a casing (12) consisting of a rear shell (20) which is adapted to be coupled in rotation to a driving shaft, an impulse wheel (30), and a front shell (18);

- a turbine wheel (32), which is arranged for rotation with a turbine hub (40), which is adapted to be coupled in rotation to a driven shaft (A);

- a lock-up clutch (16) for coupling the driving shaft and the driven shaft together, which is operatively interposed between the turbine wheel (32) and the rear shell (20) and comprises a piston (48), which is movable axially for releasably coupling together the rear shell (20) and the driven shaft (A), and which includes a damping device (50),

the damping device (50) comprising at least one guide ring (72) which constitutes the input element, a damper plate (74) constituting the output element, and circumferentially acting elastic members (76) interposed between the input element (72) and output element (74), which are coupled together in rotation but with the ability to perform predetermined circumferential displacement,

- and of the type in which the turbine wheel (32), the turbine hub (40) and the damper plate (74) of the damping device (50) are coupled in rotation by means of rigid joints,

characterised in that the damper plate (74) comprises at its inner radial end a flange portion (86) which extends axially forward between the turbine wheel (32) and the turbine hub (40), and which is coupled in rotation, by friction welding, respectively:

- at the front, to the turbine wheel (32) by means of a first welded joint (88) formed between an annular front contact face (90) of the flange portion (86) and a rear weld face (92) in facing relationship with the inner radial periphery of the turbine wheel (32), and

- at the rear, to the turbine hub (40) through a rear second welded joint (96) formed between an annular rear contact face (98) of the flange portion (86) and a front weld face (100) in facing relationship with the outer radial periphery of the turbine hub (40).

2. Apparatus according to Claim 1, characterised in that the mean diameters of the annular contact faces, namely the front contact face (90) and rear contact face (98), of the flange portion (86) are substantially equal to each other.

3. Apparatus according to Claim 1 or Claim 2, characterised in that the first welded joint (88), between the annular front transverse contact face (90) of the

flange portion (86) and the transverse rear weld face (92) of the turbine wheel (32), comprises an outer front weld band (102) and an inner front weld band (104), the flange portion (86) of the damper plate (74) extending axially over a predetermined length such as to permit access to the outer weld band (102) and inner weld band (104), respectively, of the first welded joint (88), in particular with a view to performing visual control and/or cleaning of the said bands (102, 104).

4. Apparatus according to one of Claims 1 to 3, characterised in that the second welded joint (96), between the annular rear transverse contact face (98) of the flange portion (86) and the front transverse weld face (100) of the turbine hub (40), comprises a rear outer weld band (106) and a rear inner weld band (108).

5. Apparatus according to Claim 3 or Claim 4, characterised in that the mean diameters of the front inner weld band (104) and rear inner weld band (108) of the first and second welded joints (88, 96) are substantially equal to each other.

6. Apparatus according to Claim 5, characterised in that the mean diameters of the front inner weld band (104) and the rear inner weld band (108) of the first and second welded joints (88, 96) are substantially equal to the internal diameter of the flange portion (86).

7. Apparatus according to any one of the preceding Claims, characterised in that the turbine hub (40) includes a radial plate portion (52), the outer radial periphery of which includes an annular boss (110) which extends axially forward and which carries the said front weld face (100) of the turbine hub (40).

8. Apparatus according to one of Claims 4 to 6 taken in combination with Claim 7, characterised in that the mean diameter of the rear outer weld band (106) is substantially equal to the greatest external diameter of the radial plate portion (52) of the turbine hub (40).

9. Apparatus according to any one of the preceding Claims, characterised in that the flange portion (86) of the damper plate (74) is press-formed.